

# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY BUREAU OF AIR

March 2006

Responsiveness Summary  
for the proposed issuance of  
a construction permit to  
Rochelle Ethanol LLC  
Joliet, Illinois

Site Identification No.: 197445AAC  
Application No.: 04020058

## INTRODUCTION

Rochelle Ethanol, LLC submitted an application to the Illinois Environmental Protection Agency (Illinois EPA) Bureau of Air for a permit to construct an ethanol plant at a site at 2200 Channahon Road in Joliet. After review of the application, the Illinois EPA prepared a draft construction permit and held a comment period to receive comments on this proposed project and draft permit. The comment period ran from January 11 to February 10, 2006. During this comment period, the City of Joliet requested additional time to submit its comments and the City was provided an additional 30 days, until March 13, 2006, to submit its comments.

**Upon review of comments received on this proposed project and draft permit and final review of the application, the Illinois EPA has determined that the project meets the standards for issuance of a construction permit. Accordingly, on March 21, 2006, the Illinois EPA issued a construction permit to Rochelle Ethanol for the project.**

## DESCRIPTION OF PROPOSED PROJECT

Rochelle Ethanol has proposed to construct a plant to produce ethanol from corn. The principal product of the plant would be denatured ethanol for use as motor vehicle fuel. When added to gasoline, ethanol is an octane enhancer and an oxygenated fuel additive, which reduces hydrocarbon and carbon monoxide emissions in vehicle exhaust. The plant would produce ethanol by batch fermentation of ground corn, followed by processing to separate out and purify the ethanol. The plant would also produce animal feed from the solid material remaining after the fermentation process. The plant would have facilities to receive raw material (grain) and ship products (fuel ethanol and feed) by both truck and rail. Natural gas would be used as the fuel for the plant.

## QUESTIONS AND COMMENTS

### **1. What is the capacity of the proposed plant?**

The permitted capacity of the plant would be 50 million gallons of fuel ethanol per year.

### **2. The proposed fuel ethanol plant should be required to run as a “dry mill operation” and use the latest thermal oxidizer technology and scrubbers to minimize off-site odors and emissions.**

The plant will be a “dry mill” plant. A thermal oxidizer and scrubbers will be used, as appropriate for the different types of units at the plant, to control emissions from the plant. This technology should minimize offsite odors, however the permit does not excuse Rochelle Ethanol from taking additional steps as needed to eliminate air pollution, including nuisance odors.

### **3. How many scrubbers will the proposed plant have?**

The proposed plant will have two scrubbers. One scrubber will control emissions from the fermentation area of the plant, including the fermentation tanks in which corn is converted to ethanol. This scrubber will also control the beer well, in which the beer from the fermentation tanks is temporarily stored pending processing. The second scrubber will control emissions from the distillation operations, in which ethanol is separated from the beer and purified. This scrubber also controls the mash preparation operations, in which corn is prepared for fermentation, and the two stillage tanks that hold non-ethanol liquid streams produced from the beer that, due to their nutritional value, are incorporated into the feed.

### **4. What will the thermal oxidizer control?**

The thermal oxidizer will control emissions from two natural gas-fired feed dryers, in which feed material is processed to reduce the moisture content to a level that allows for extended storage of the feed. The thermal oxidizer will also control emissions from the feed cooling operation, in which hot feed from the dryers is cooled before being stored at the plant prior to load out.

### **5. What is the difference between the existing ethanol plants that are currently under consent decrees and this proposed plant?**

In terms of emissions control equipment, the existing ethanol plants that have been the subject of consent decrees requiring installation of additional emissions control equipment lacked combustion-type emission control equipment on their feed dryers. They also varied in the type of control equipment used and level of control required for other operations. The feed drying operation at the proposed plant is being built with combustion-type emissions control, i.e., a thermal oxidizer. Emissions of other operations are also being effectively controlled with appropriate control systems.

### **6. Odors and nuisance emissions are typically associated with ethanol plants. How do I know that the stacks have been designed to minimize impacts on nearby properties? Such issues should be addressed prior to construction to eliminate any risk of odor or nuisance emissions from the plant.**

The permit requires use of stacks that reflect good engineering practice to minimize potential nuisance impacts from the proposed plant. In addition, if the combination of emission control

equipment and elevated stacks are not sufficient to prevent nuisance conditions, the permit does not excuse Rochelle Ethanol from the obligation to undertake further actions as may be needed to eliminate air pollution, including raising the height of stacks, using alternative scrubbant materials, installing back-up control systems, or altering process conditions in emission units.

**7. Fugitive dust and odors are not compatible with adjoining recreational uses. The dust and vapors will adversely affect the appearance of adjacent structures, which is paramount to successful operations in the recreational industry. It will increase the maintenance costs and the grain dust may cause significant biological problems for the water system at Splash Station Water Park.**

The permit requires Rochelle Ethanol to follow good air pollution control practices to minimize fugitive dust from the plant. The required measures include pavement of all regularly traveled entrances and exits to the plant and treatment of paved and unpaved roads and areas that are routinely subject to vehicle traffic. Rochelle Ethanol is required to implement these control measures for fugitive dust in accordance with written control program that includes identification of the sources of fugitive emission dust and the control measures (e.g., water spray, surfactant spray, water flushing, or sweeping) that will be used.

As already explained, Rochelle Ethanol is required to use appropriate emission control equipment and have stacks that reflects good engineering practice, so as to minimize the potential for nuisance odors from the proposed plant. It must also use appropriate equipment to control particulate matter emissions from the grain handling operations at the plant.

**8. I am concerned about the compatibility of the proposed plant with the surrounding businesses and land uses. Rochelle Ethanol should find a more appropriate site in the area.**

The Illinois EPA does not regulate the location of sources. Land use planning and zoning are controlled by local government. However, having selected this site, Rochelle Ethanol must now construct and operate to be a good neighbor with existing facilities and businesses already located in the area.

**9. Based on its capacity, the proposed plant will process approximately 20 million bushels of corn annually. This will require 100 to 200 truck trips along Route 6 and other routes daily, with an increase in traffic noise, nuisance dust and vehicle exhaust. Additional truck traffic will also result from the transport of ethanol and feed from the plant. This is not compatible with adjacent land uses and could increase accidents along this road.**

The additional traffic due to the proposed plant should not significantly affect traffic on Route 6, given the current volume of traffic on this highway. Based on data from the Illinois Department of Transportation, there are currently more than 10,000 vehicles traveling this highway on a typical day. It is the responsibility of the state transportation department maintain this highway to accommodate the actual volume of traffic and the responsibility of state and local police forces to and enforce traffic safety laws and to prevent accidents and reduce their severity.

**10. Due to its location, the proposed plant will be at an economic disadvantage compared to plants in rural areas. Because the site is in a rapidly urbanizing area, the local supply**

**of corn supplies will continue to diminish over the years. These factors may cause Rochelle Ethanol to take shortcuts in operation of the plant or even to go bankrupt. Having another closed plant is not what Joliet needs, especially next to its premier recreation and tourism area.**

Rochelle Ethanol has indicated that the proposed location also has advantages compared to a rural location. For example, the site is closer to markets for ethanol and can receive grain and ship ethanol and feed by rail. In any event, the Illinois EPA does not regulate the process by which a source selects the site for a proposed plant. In addition, poor site selection by a source does not allow a source to take shortcuts in its compliance with applicable environmental requirements.

**11. Will County is part of the Greater Chicago Area, which is a nonattainment area for ozone and particulate matter, measured as PM 2.5. Will County is the fastest growing county in Illinois. Permitting additional large sources of emissions is not in the best interests of the people of Will County or the City of Joliet. It has the potential to limit future growth.**

While Will County is in a nonattainment area, as stated in this comment, the proposed plant will not restrict potential future growth in Will County. The plans that the State of Illinois must develop to bring the Greater Chicago Area into attainment for the ozone and particulate matter ambient air quality standards are required to provide for both the development of new sources in the area and the expansion of existing sources in the area. This is because changes in sources will occur and are necessary for the economic vitality of the region and accordingly must be factored into the plans for attainment. Moreover, as the required attainment plans will address the Greater Chicago Area, the proposed plant will only play a small role in the changes in emissions that are and will be occurring in the region.

**12. No additional polluting sources should be permitted to be constructed in Will County because Will County is in a nonattainment area.**

The proposed plant is being permitted for emissions that are below the levels at which the plant would be considered a major source. As such the plant should not have a noticeable effect on local air quality. The plant is of concern as it generally affects the loading of pollutants in the region that have contributed to exceedances of the air quality standards on a regional basis. Moreover, status of an area as nonattainment does not prevent nor should it prevent construction of new sources. Even in the case of new sources with major amounts of emissions, new source can be constructed if appropriate emission controls are used and emission offsets are obtained. However, this project is not a major source of emissions and the state rules addressing major projects in nonattainment areas, Major Stationary Source Construction and Modification (MSSCAM), 35 IAC 203, do not apply.

**13. The proposed plant is not a new major source under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, because its emissions would be less than the major source thresholds under these rules. How many minor sources does it take until a proposed new plant would become a major source? The state of Illinois already has six ethanol plants. Doesn't this plant now constitute a New Major Source in the State of Illinois?**

The relevant rules do not act in the manner suggested by this comment. Under both PSD and MSSCAM, a proposed plant is considered by itself when determining whether it would qualify as a major source. A proposed new source is not grouped or aggregated with other similar plants already existing at other locations in a state, to determine if the proposed plant is a major source.

**14. The proposed plant would not utilize the most stringent emission control technology available.**

The proposed plant will be using a thermal oxidizer, two scrubbers and fabric filters as appropriate to control emissions from the different units at the plant. This is the technology currently used to effectively control emissions from ethanol plants. Stringent limits are also being set for the performance of this technology, including a requirement that the thermal oxidizer achieve at least 99 percent control of emissions of organic material. The proposed plant will not be a major source of air emissions under the federal PSD rules or state MSSCAM rules, so no analysis has been performed to determine whether the emission limits that must be achieved would qualify as Best Available Control Technology as required by PSD or Lowest Achievable Emission Rate as required by MSSCAM.

**15. The application for the proposed plant is administratively incomplete. According to 35 IAC 201.152, a location must be provided as to the “specific points of emission” or the application is incomplete pursuant to 35 IAC 201.158. The address 2200 Channahon Road is too vague.**

The application adequately describes the location of the proposed plant and emissions units that would be constructed at the plant. With respect to location of a proposed plant and emission units, the relevant rule cited in this comment provides that an application must include “maps, statistics and other data reasonable sufficient to describe the location of the emissions unit or air pollution control equipment.” The application for the proposed plant meets this requirement. Among other items, the application contains a detailed plot plan for the proposed plant showing the location of individual emission units or points of emissions at a facility that would be developed near the southwest boundary of the property, close to the Des Plaines River.

**16. It is my understanding that Rochelle Ethanol does not have a land purchase contract for the site. How can a construction permit be granted before Rochelle Ethanol has a contract for the site?**

If Rochelle Ethanol has not yet obtained appropriate control over the site of the proposed plant, it will have to obtain such control before proceeding with the construction of the plant. However, the rules governing issuance of air pollution control construction permits do not require a permit applicant to have control of the site on which it proposes to build a source before a permit can be issued. Permitting and land acquisition, as well as any local project approvals, are separate requirements for a proposed project.

**17. The permit would allow the proposed plant to use up to 2,100 million cubic feet of natural gas per year. This is about 20 percent more than is typically needed to produce 50 million gallons of ethanol. If the plant can use more natural gas than is needed, what prevents it from producing more ethanol?**

The permit restricts the ethanol production from the plant to no more than 50 million gallons

per year. The plant is required to keep production records to verify compliance with this restriction. If Rochelle Ethanol determines it could comply with the emissions limitations set by the permit while producing more ethanol, it would have to obtain a revised permit from the Illinois EPA before doing so.

**18. Based on my review of the application, I believe that upon receiving a permit Rochelle Ethanol intends to immediately ask the Illinois EPA for approval for an additional 50 million gallon per year capacity, a scenario that I believe is common in the industry.**

The Illinois EPA has not seen the scenario described above. However, if a company was to intentionally pursue this scenario in an attempt to circumvent applicability of MSSCAM or PSD to a proposed plant, the Illinois EPA would take appropriate enforcement action as such action would be considered an attempt to engage in “sham” permitting on the part of the company.

**19. The Illinois EPA should inspect the plant on a regular basis to ensure compliance.**

The Illinois EPA will inspect the proposed plant on a regular basis to help ensure it operates in compliance with applicable emission standards and the conditions in the construction permit. The Illinois EPA will inspect the plant during its initial startup and observe the required emission testing of various units at the plant. Thereafter, the plant will be inspected according to the regional office’s inspection schedule, usually once every two to three years. The Illinois EPA would perform more frequent inspections if problems are observed at or reported by the plant or if complaints are received from the public about its emissions.

**20. What assurances do I have that the conditions of the permit will be met? Illinois EPA personnel have told me on several occasions that the Illinois EPA no longer has the staff to oversee these facilities. With the recent 16 percent reduction of the Illinois EPA’s budget, from where will the funds for the oversight of this plant come?**

While staff from the Illinois EPA’s Regional Office in DesPlaines will inspect this plant to help ensure that it meets applicable air pollution control requirements, the plant is also required to conduct operational monitoring, keep records, and submit reports on its operation and emissions to the Illinois EPA. These reports are reviewed by the Compliance and Enforcement Section of the Illinois EPA in Springfield. Changes in the of the budget of the Illinois EPA will require that the Illinois EPA carry out its activities more efficiently and place a greater responsibility on sources so that the Illinois EPA ‘s resources can be applied where they are most needed. This includes witnessing required emission testing that must be performed by sources prior to obtaining operating permits, to confirm that sources meets the conditions established in their construction permits. It also includes inspections of sources at which problems have been observed or for which pollution complaints have been received from the public.

**21. Why can’t alternative technologies be explored, like wind and solar power?**

Alternative technologies can be explored by companies that want to pursue such technologies. However, ethanol is generally produced as a fuel for motor vehicles, supplementing or displacing and replacing gasoline. Companies pursuing projects involving wind and solar power are generally interested in producing electricity for distribution on the power grid, as an alternative to electricity from fossil fuel fired power plants.

**22. Where would the water required by the proposed plant, approximately 125 million gallons per year, come from? I know that this is something that would not be addressed in the air pollution control construction permit.**

In its application, Rochelle Ethanol indicates that the plant would be getting its water from the local municipal water supply.

**23. Will the citizens of Illinois benefit from this plant or will the ethanol be shipped elsewhere?**

The plant will benefit the State of Illinois by employing people living in Illinois and by generating sales, income and property tax revenues. However, these economic benefits are not taken into account in the Illinois EPA's permitting decision, which is narrowly focused on applicable requirements for control of air pollution. Although the greater Chicago Area is the most likely destination for the ethanol produced by the plant, Rochelle Ethanol, like other manufacturing facilities located in Illinois, is not restricted to selling its products only in Illinois.

#### **FOR ADDITIONAL INFORMATION**

Questions about the public comment period and permit decision should be directed to:

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